

Exhibit X-4
HR Outsourcing Frequency

Outsourced Area	Frequency (Percent of Total)
Benefits	60
Recruiting	48
Employee Services	31
Technology	64
Other HR Activities	40

- NorthStar contacted seven companies that provide a comprehensive HR outsourcing option. The minimum workforce requirements for five of these companies providing this service ranged from 1,500 to 10,000. Another company provided comprehensive HR services to mid-size companies, but served a limited geographic area, which did not include Illinois. The seventh company declined to participate.
- 4. It may be economically beneficial for IAWC to utilize a PEO to provide multiple, bundled HR services, with potential annual cost savings up to \$467,000.**
- A PEO provides comprehensive HR outsourced services by assuming a co-employer role with the client company. The PEO assists with overall HR and risk management and assumes legal responsibility for core employer responsibilities, such as benefits, payroll, unemployment, and workers compensation while the client company retains the right to make hiring decision and manage its workforce. With a PEO, the company's employees would be included in the PEO's benefits plans. Being able to participate in a larger group than would otherwise be possible has been an attraction to this type of co-employer arrangement.
 - PEOs have traditionally served organizations much smaller than IAWC; however, increasingly, larger businesses also are finding value in a PEO arrangement, because PEOs offer web-based HR technologies and expertise in HR management. PEOs can partner with companies that have 500 or more employees and work in conjunction with their existing human resources department.²³
 - Although a PEO can provide services to companies with bargaining unit employees, NorthStar research determined that multiple union contracts at IAWC present additional challenges.
 - NorthStar contacted eight PEO companies - two provided pricing. The results are summarized below in **Exhibit X-5**:

²³ National Association of PEOs website

Exhibit X-5 PEO “Bid” Results

Category	Count	Comments
Declined to Bid	2	Declined to bid due to concerns regarding multiple union contract applicable to nearly 70 percent of IAWC’s workforce
	1	Does not provide services
Did Not Respond	3	
Provided Bids	2	\$300k to \$750k, plus set-up costs ranging from \$17k to \$26k

- Prices for the two PEOs that provided preliminary bids ranged from \$300,000 to \$750,000 not including set-up costs. Although no company provides exactly the same services, this pricing would compare to IAWC’s 2010 cost of \$767,272²⁴ for similar services provided by the following business units combined: BSC, Employee Services, and Western Division HR, exclusive of the labor relations function. **Exhibit X-6** provides a comparison.

Exhibit X-6 PEO Cost Comparison

Vendor	Vendor Cost	Potential Cost Savings	Notes
Vendor 1	\$300,000	\$467,272	Includes benefits service center, payroll and HR administration
Vendor 2	\$450,000 - \$750,000	\$17,272 to \$317,272	Comprehensive HR package including HR services, payroll, benefits administration and safety loss control services [1]

Note 1: Elimination of safety loss control services and supplemental HR services does not reduce the vendor’s price.

- Companies using PEO service typically have at least one internal position to manage the PEO relationship and handle other HR responsibilities not provided by the PEO. This could offset some of the potential cost savings.
- 5. Labor relations services similar to those provided by AWWSC to IAWC are not economically advantageous on an outsourced basis.**
- NorthStar identified six labor relations service providers. Five provided consulting rather than outsourced service and focused on union avoidance.
 - The other firm provides services similar to those provided by AWWSC, but would not be a cost effective option. This firm typically charges \$350 per hour for these services. Using the 1,931 hours charged to IAWC as a basis, the outsourced costs would total \$675,850, well over the \$113,309 that AWWSC charged IAWC for labor

²⁴ DR 55 confidential, 406

relations services in 2010 (\$61,207 in AWK and \$52,102 in Western Division charges).

- Law firms offer another source for labor relations expertise, but these companies provide legal advice and representation rather than day-to-day performance of labor relations activities. This would not be a practical or cost effective alternative to IAWC's current approach.

6. NorthStar was unable to obtain bids for an outsourced learning and development function.

- Outsourced training and development services are widely available, but are typically provided on a consulting or project basis for companies of IAWC's size.
- NorthStar contacted eleven training and organizational development service providers. Five firms did not respond to our inquiries, and five declined to participate.²⁵
- One firm offers services on an ala carte basis. Pricing was only provided for instructor-led and e-learning training programs, not the other employee and organizational development services provided by AWWSC for IAWC.
 - The costs for instructor-led programs ranged from \$2,200 for a half-day program to \$12,200 for a five-day program. IAWC instructor-led program costs were not separated from this department's budget, so no comparison was made.
 - The cost for e-learning programs was \$3,000 to \$10,000 for a thirty-minute course. In 2010, IAWC employees had unlimited access to web-based training programs through AWWSC's STAR12 program provided by Rockhurst University. The total cost for this service was \$4,704, a very competitive price.²⁶

7. NorthStar was unable to obtain viable bids for compensation and benefits administration as outside service providers typically provide these services on a project or consulting basis for small to mid-sized organizations such as IAWC.

- NorthStar contacted six nationally recognized companies that provide compensation and benefits services. Three did not respond; two indicated that they provide similar services, but did not provide pricing information; and one provided compensation services on a consulting rather than outsourced basis.
- Compensation and benefits services provided by smaller vendors are typically contracted for specific projects, such as job evaluation, compensation and benefits market analyses, and development of compensation structures.²⁷

²⁵ Two indicated that they provided the requested services but one wanted to keep their pricing confidential, and the other would not provide pricing without knowing IAWC's name.

²⁶ DR 251, IR 93

²⁷ SHRM Q&A, November 2009

- Based on NorthStar's research, the smaller, regional firms do not typically provide the scope of services that could replace the corporate HR compensation and benefits function. NorthStar contacted four firms operating in Illinois. The one responding vendor confirmed that these services are typically offered on a project or consulting basis rather than a comprehensive outsourced package. Because the pricing was provided by activity in some cases and by the hour in others, a cost comparison with AWWSC's compensation and benefits function was not possible.

8. IAWC would not economically benefit from outsourcing affirmative action services.

- In 2010, AWWSC charged IAWC approximately \$4,568 for one affirmative action plan, performed by the HR processes and systems business unit.²⁸
- Based on research of companies that provide comprehensive affirmative action planning services and not just a data service, this charge is competitive with the market. Vendor pricing ranged from \$4,500 to \$5,500 for one plan. If additional plans are needed, the price per plan is lower.

9. HR administrative services (i.e., payroll processing, the BSC and other HR administrative functions) are available in the marketplace at a competitive cost, at a savings of up to \$275,589 annually for IAWC.

- Payroll processing involves the biweekly processing of payroll for the 496 IAWC employees and includes timekeeping and related general ledger reconciliations, processing of payroll and payroll-related changes, tax payments and other disbursements, i.e. 401(k), unemployment claims management (including representation at hearings when needed), and data management and reporting.²⁹
- The BSC involves the administration, compliance, data management and reporting/filing requirements, and management of the open enrollment process for the group health, dental, vision, and drug program, including claims and status changes. This function also answers employee questions regarding plan benefits and administers the life insurance, short term disability (STD) and long term disability (LTD), 401(k) and pension programs, Consolidated Omnibus Budget Reconciliation Act (COBRA) and the employees' flexible spending accounts.
- Other HR administration manages employee leave programs, recruitment, Employee Assistance Program (EAP), pre-employment physicals, drug testing and background checks, new hire processing and file set-up and employment status changes, and performs other HR data tracking and reporting.
- **Exhibit X-7** compares IAWC's HR administrative services cost from AWWSC to those of outside vendors.

²⁸ DR 344

²⁹ IAWC's timekeepers enter the payroll data.

Exhibit X-7
HR Administrative Service Price Comparison³⁰

Service	Price Range (Annual)	IAWC Cost (Annual)	Potential Annual Savings	Notes
Payroll	\$26,920 to \$39,655	\$178,896	\$139,241 to \$151,976	Annual administration/processing fees are included. Does not include a one-time set up costs of \$3,000 - \$4,000. Note: These prices do not include unemployment claims representation. Includes mailing to one location.
Benefits Service Center	\$68,640 to \$96,000	\$126,171	\$30,171 to \$57,531	Annual administration/processing fees are included. Does not include a one-time set-up cost of \$41,000 - \$60,000. Note: This is one provider.
Payroll & Benefits Bundle	\$113,342 to \$159,600	\$305,067	\$149,067 to \$191,725	Annual administration/processing fees are included. Does not include a one-time set-up/conversion fee of \$10,000 to \$24,000. Note: Less expensive provider requires assignment as the benefits broker. Includes mailing to one location.
Payroll, Benefits & HR Admin Bundle	\$240,000 to \$270,000	\$515,589	\$245,589 to \$275,589	Annual administration/processing fees are included. Does not include one-time set-up cost of \$17,000 for low cost vendor. IAWC Charges include BSC (\$126,171), Payroll (\$178,896) and part of Western Division Charges (\$210,522). ³¹

³⁰ DR 55 confidential, 406, 411, NorthStar analyses

³¹ DR 406, 411

XI. INFORMATION TECHNOLOGY SERVICES

This chapter covers the ITS function performed by the AWWSC and its charges to IAWC. AWWSC charged IAWC \$5.506 million for ITS in 2010.

A. BACKGROUND

AWWSC's ITS organization is comprised of six departments: administration, enterprise architecture, infrastructure and operations, business application development, client services and ITS security, and the Project Management Office (PMO).¹

- Administration includes the VP and Chief Information Officer (CIO), the executive assistant to the CIO, and senior financial analyst. The organization develops and implements ITS strategies. It provides operational guidance, budgetary management and reporting, also it provides planning, governance and personnel management.²
- The enterprise architecture team focuses on long range ITS technology planning. The ITS objective is to focus on technologies that provide value to the operating companies, are cost-effective to implement and maintain, and are consistent with expected performance standards.³
- The infrastructure and operations team is responsible for the operations, support, and maintenance of the data center, voice and data communications for the infrastructure. It is the responsible for all the servers in the data center, back-up and recovery processes, voice and network performance, and bill print and distribution operations.⁴
- The business application development team focuses on the design, development, and delivery of software applications necessary to meet operating company needs. It also provides maintenance support for all application related technology and addresses ongoing enhancement requests and upgrades to applications.⁵
- The client services and ITS security support organization provide many levels of end user support. These functions include end user desktop support, service desk support, user access provisioning, change control management, desktop and software patching, cyber-security monitoring, vulnerability management, and security testing.⁶
- The PMO is responsible for the management of all projects within ITS.⁷

The ITS organization chart from mid 2010 is shown in **Exhibit XI-1**.⁸

¹ DR 1

² DR 106

³ DR 1

⁴ DR 1

⁵ DR 1

⁶ DR 1

⁷ DR 1

Exhibit XI-1 ITS Organization

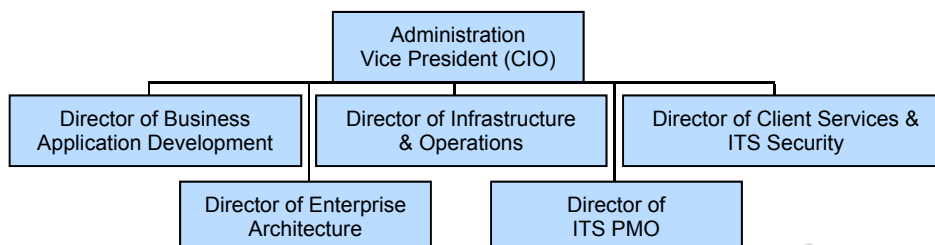


Exhibit XI-2 shows the 2010 ITS costs that AWWSC billed IAWC. The costs are segmented by major function. This allowed the grouping of costs by area of service. These groupings were used when contacting potential providers of outsourcing in the ITS function. The first approach utilized was to ask potential outsourcers for competitive information on outsourcing the whole ITS function. In cases where they were not able to provide this information, we then asked about the individual sections (I) CIO function, (II) client services, (III) data center, (IV) development, (V) architecture, and (VI) PMO.

Exhibit XI-2 2010 AWWSC ITS Charges⁹

ITS Services (ITS)	
Total IAWC Charges for CY2010	\$ 5,506,172
032071 CORP-ITS Administration (CIO)	\$ 257,620
032093 CORP-ITS Architecture	\$ 180,273
032072 CORP-ITS Project Management Office (PMO)	\$ 153,028
Client Services	\$ 1,336,624
032030 CORP-ITS Services Client Relations Administration	\$ 31,788
032031 CORP-Service Desk	\$ 109,215
033531 CE-Western Client Services & Support	\$ 1,005,603
032033 Change Control and Desktop Automation	\$ 24,888
032077 CORP-ITS Security Operations	\$ 165,130
Infrastructure Services	\$ 2,337,744
032073 CORP-ITS Infrastructure/Operational Administration	\$ 44,930
032074 CORP-ITS Production	\$ 1,475,896
032075 CORP-Enterprise Server	\$ 445,450
032076 CORP-Communications	\$ 371,468
Application Development Services	\$ 1,240,698
032078 CORP-ITS Administration - Business Application Development	\$ 79,060
032032 CORP- ITS Services - Business Application Development - Core Shared	\$ 193,597
032079 CORP-ITS- Business Application Development - Middle Office App	\$ 224,430
032080 CORP-ITS- Business Application Development -Back Office Apps	\$ 208,338
032081 CORP-ITS- Business Application Development - Quality & Methodology	\$ 86,542
032082 CORP-ITS- Business Application Development - Client Facing Group	\$ 212,142
032083 CORP-ITS- Business Application Development - Field Service Applications	\$ 236,588
035031 SE – ITS Client Relations (Allocated Overhead) ¹⁰	\$ 86
036531 NE – Eastern Client Services & Support (Allocated Overhead) ¹¹	\$ 98

⁸ DR 241

⁹ DR 55, confidential

¹⁰ DR 217

¹¹ DR 218

B. TASKS PERFORMED

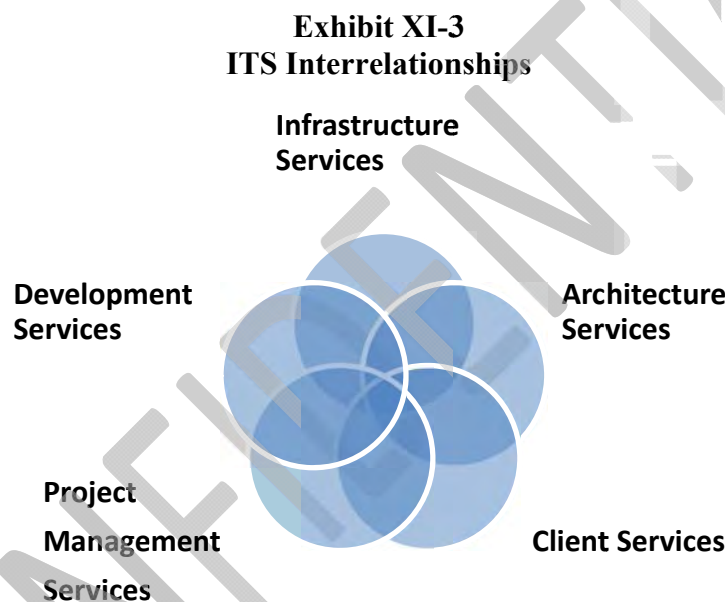
To complete the work in the ITS area, NorthStar performed the following tasks:

1. Determined AWWSC's cost of services for ITS during 2010 providing support activities such as enterprise architecture, infrastructure and operations, business application development, client services and ITS security, and the PMO.
2. Reviewed existing policies and procedures for allocating ITS costs.
3. Determined the charges directed to IAWC by AWWSC, on a business unit or sub-function basis, for direct charges, allocated charges and overhead costs.
4. Reviewed documentation for functions charged and allocated to IAWC.
5. Reviewed the relevant portions of the IAWC's testimony, exhibits, and supporting documentation from Docket 09-0319 specific to ITS. Testimony and supporting information was used to develop an understanding of the IAWC's justification for obtaining these services from AWWSC and the method(s) used to support the costs compared to competitive market providers.
6. Identified services and evidence of controls over affiliate costs within ITS.
7. Determined whether reports and documentation included in the testimony provide reasonable support for the costs charged to IAWC for the ITS services.
8. Evaluated the functions performed by AWWSC ITS for outsourcing research.
9. Reviewed data responses to identify metrics, deliverables, and service parameters relative to the services or sub-services provided by affiliates for ITS.
10. Researched industry standards and benchmarks for ITS level of services and cost.
11. Contacted potential competitive service providers to obtain pricing for the ITS function as a whole and in its parts.
12. Developed conclusions regarding the reasonableness of prices and value of the services provided by AWWSC, given the competitive pricing and all externalities and unique factors.
13. Prepared a task report on the AWWSC ITS services and competitive research results

C. RESULTS

1. AWWSC consolidates ITS functions and provides integrated ITS services to IAWC.

- In the case of ITS, the size of the organization has a bearing on the actual economies of scale that can be expected when services are provided by an outside vendor.
- Additionally, unlike many support functions that can operate independently, it is often impractical to break-up ITS services due to their functional interrelationships and interdependencies. For example, the interaction between the data center and application development exists or application development and client services as shown in **Example XI-3**. All components are necessary to perform the service cost-effectively.



2. The costs of IAWC's ITS for 2010 approximate utility industry averages for ITS spending.¹²

- IAWC's ITS costs for 2010 were 2.4 percent of revenue, compared to an industry average of 2.5 percent.

3. No ITS outsourcing companies were interested in providing ITS services to IAWC.

- NorthStar contacted fifteen potential outsourcing companies that offer ITS outsourcing.
- The ITS outsourcing firms contacted included all of the firms identified through market research that provide ITS outsourcing services.

¹² DR 221

- Initial contact was made by e-mail and web forms and then followed up by telephone. Larger organizations indicated that IAWC was not large enough for the vendors to provide economic information.
- The vendors were asked if they could outsource the entire ITS function or could they provide information based on the six business functions:
 - CIO Administration
 - Architecture Organization
 - Project Management Organization
 - Infrastructure and Operations Organization
 - Client Services and Security
 - Application Development Organization
- Vendors were unwilling to provide economic information on the potential for outsourcing of IAWC's ITS services.
- The relatively small size of IAWC's independent ITS operation combined with its significant number of business functions and operating systems, make it unattractive for outsourcing.

XII. CUSTOMER RELATIONS

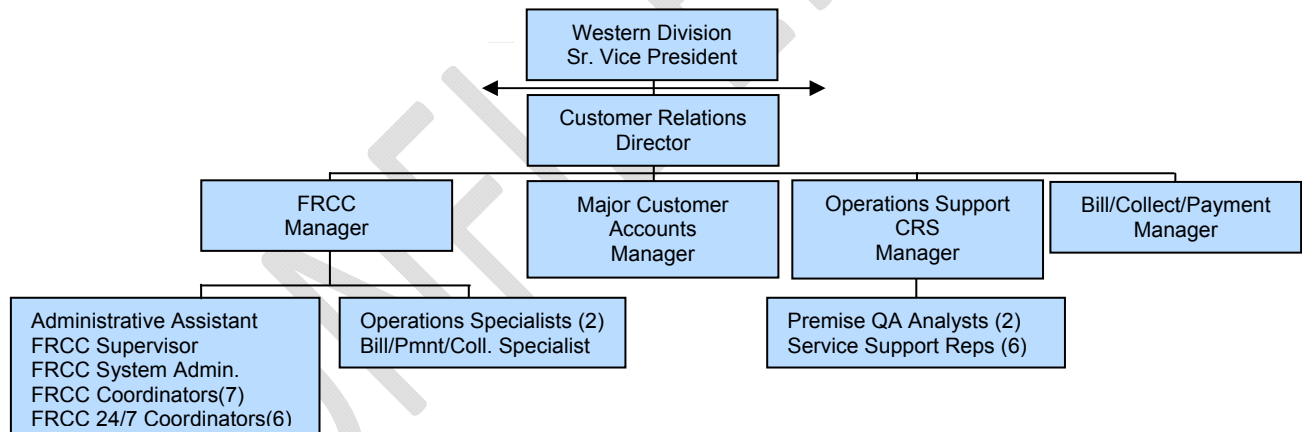
This chapter addresses the customer relations' services provided by AWWSC's Western Division to IAWC. AWWC charged IAWC \$779,632 for these services in 2010.¹

A. BACKGROUND

AWWSC's Western Division customer relations department provides dispatch and operations support services for IAWC. These functions are performed at the state level for some of the larger states, but provided by the Western Division for IAWC in order to take advantage of economies of scale. Customer relations provides dispatch services for all states in the Western Division, but does not provide operations support for California or Arizona, as these states have their own back office functions.

The Customer Relations Director reports directly to the AWWSC Western Division Senior Vice President (SVP). The organization structure and staffing is shown in **Exhibit XII-1**.

Exhibit XII-1
AWWSC Customer Relations Organization²



Customer relations operates the FRCC, which serves as the dispatch center for IAWC's Field Service Representatives (FSR). FRCC coordinators are responsible for assigning service orders to the FSRs and, throughout the day, monitoring the FSRs progress and the status of "special handle" service orders such as emergency orders received during the day. The FRCC operates 24 hours per day, seven days per week and handles "time critical" activities including water quality and emergency service requests.

¹ DR 55, confidential

² DR 2 and 241

The operations support function performs the back office review, analytics and reporting for IAWC's field operations, which include meter reading, field service orders, and collections. Some of the back office functions used to be performed by the CSC in Alton. Specific operations support activities provided by the Western Division include:

- Meter reading/billing support involves the review of accounts with consecutive meter reading estimates and potential meter reading/billing errors (inactive accounts with consumption, active accounts without consumption, and service order issues).
- Premise Quality Assurance (QA) reviews the account set-up for all new and a sample of existing premises to ensure the account has been set-up on the correct rate and the charges are correct.
- Collections support assists IAWC's field collections by ensuring customers have received the appropriate notifications (per regulation) and by calling all customers before the disconnection order is scheduled and IAWC FSRs are dispatched. Operations support also monitors and reports on the number of non-pay disconnects performed by IAWC. The level of collections support provided is determined by IAWC.³
- FSR performance monitoring, productivity analyses and other analytical support. Operations Support also reviews and updates account information as needed based on information reported by the FSRs.

In 2010, AWWSC's Western Division customer relations department charged IAWC \$779,632. All customer relations' costs are charged to one cost center. The costs associated with the two functions - FRCC and operations support - are not broken out. In order to estimate the relative cost of the FRCC and operations support function, NorthStar allocated the total customer relations costs based on the proportion of labor charges from FRCC positions as shown in **Exhibit XII-2**.

Exhibit XII-2
Estimated Costs – FRCC and Operations Support⁴

	FRCC	Operations Support	Total
Labor Hours	8,871	10,184	19,055
Percent	46.6%	53.4%	100.0%
Costs	\$362,955	\$416,677	\$779,632
Percent	46.6%	53.4%	100.0%

B. TASKS PERFORMED

To complete the work in this area, NorthStar performed the following tasks:

³ IS 11

⁴ DR 55 confidential, 2, 241, and NorthStar estimate of FRCC versus Operations Support costs based on personnel hours

1. Determined the cost of services obtained from AWWSC during 2010 for customer relations.
2. Reviewed existing policies and procedures for allocating customer relations' costs.
3. Determined the charges directed by AWWSC to IAWC.
4. Reviewed the relevant portions of IAWC's testimony, exhibits, and supporting documentation from Docket 09-0319 specific to customer relations.
5. Identified services and evidence of controls over AWWSC customer relations' costs.
6. Determined whether reports and documentation included in the testimony provide reasonable support for the costs charged to IAWC for the AWWSC services.
7. Compared the competitive cost of services to the AWWSC costs.
8. Developed conclusions regarding the reasonableness of prices and value of the services provided by AWWSC.
9. Prepared a task report.

C. RESULTS

1. **In NorthStar's experience an independent FRCC function is not typically outsourced and NorthStar was unable to provide an outsource provider.**
 - NorthStar estimates that the FRCC accounts for about 46 percent, or \$363,000, of the 2010 customer relations charges to IAWC.
 - Dispatch services are provided 24/7 to address water quality and other emergency service requests. At least two people must be on shift at all times. The function is performed by the Western Division to take advantage of economies of scale given the shift requirements and work volume.
2. **Some of the billing and collections services performed by operations services could be performed by the CSC or potentially outsourced; however, NorthStar is unable to isolate these costs for comparison purposes.**
 - NorthStar estimates that the back office functions account for about \$417,000 of the 2010 customer relations charges.
 - The collections activities could easily be outsourced; however, the same individuals provide customer relations' billing and collections support functions and these costs are not readily segregated.
 - The billing and meter reading analyses performed by customer relations are similar to the analytical work performed by the billing group in AWWSC's CSC and could just

as easily be performed by the CSC. However, as discussed in Chapter IX, NorthStar was unable to find an outsourced service provider for the billing analytic function.

- As discussed in Chapter IX, collections costs range from \$25 to \$28 per hour for inbound and outbound collections call work. AWWSC charged IAWC \$40.91 per hour for FRCC and billing/collections services as shown in **Exhibit XII-3**.

Exhibit XII-3
2010 AWWSC Charges to IAWC for Customer Relations⁵

033503 CE-Customer Relations	
Grand Total	\$779,632
Total Hours Charged to IAWC	19,055
Total Rate per Hour	40.91
501200 Labor	\$427,852
501210 Labor Non Scheduled Overtime	\$5,258
501711 Incentive Plan-Off-Annual	\$17,706
504100 Group Ins Maintenance	\$1,380
504500 Other Welfare Maintenance	\$2,588
504610 Employee Awards	\$12
504660 Tuition Aid	\$1,737
504670 Training	\$175
507100 401k	\$7,259
508101 Defined Contribution Plan	\$4,068
520100 Materials & Supplies Operations	\$1,799
534998 Benefit Overhead	\$222,636
534999 General Overhead	\$60,311
541400 Rents-Equipment	\$1,393
550000 Transportation ITS-Admin	\$13
550005 Mileage Reimbursement Personal Vehicle	\$67
575002 Misc General Office	\$1,944
575340 Employee Expense	\$6,598
575342 Employee Exp Conf/Registration	\$692
575350 Meals Deduct	\$1,208
575351 Meals Non Deduct	\$1,208
575420 Forms	\$13
575500 Janitorial	\$2,838
575620 Office & Admin Supplies	\$3,016
575625 Overnight Shipping	\$262
575660 Postage	\$245
575670 Relocation Expenses	\$2,585
575740 Telephone	\$385
575741 Cell Phone	\$2,870
575780 Trash Removal	\$219
575998 P-Card Undistributed	-\$72
675000 Misc Maintenance	\$1,365

⁵ DR 55, confidential

XIII. OPERATIONS SERVICES

This chapter covers the operations services management, administrative and network support functions of AWWSC, which provides overall governance and operational performance management for the AWK operating companies, including IAWC. IAWC was charged nearly \$1.3 million for these services in 2010.

A. BACKGROUND

The AWWSC operations services group is a multi-disciplinary organization comprised of technical, operations and business functions serving AWK regulated and non-regulated subsidiaries in the following areas: engineering, maintenance & SCADA services, innovation and environmental stewardship, central laboratory services, supply chain, best operating practices, and operational risk management. Each of these operations services subgroups is responsible for establishing and implementing functional strategies with supporting policies, practices and standards. These groups also provide expertise and resources to the operating companies, including IAWC, to address issues or events, support implementation of functional strategies and augment operating company staff on larger or more complex projects. The operations services department utilizes economies of scale and scope, and provides highly experienced, specialized resources to the operating companies. The operations services department is also charged with driving best practices in each functional area.¹

This chapter covers operations services management, which provides overall governance, and management of the technical operations and functions within the AWWSC operational services department, administrative services and network support. Operations services management is comprised of two senior management positions.

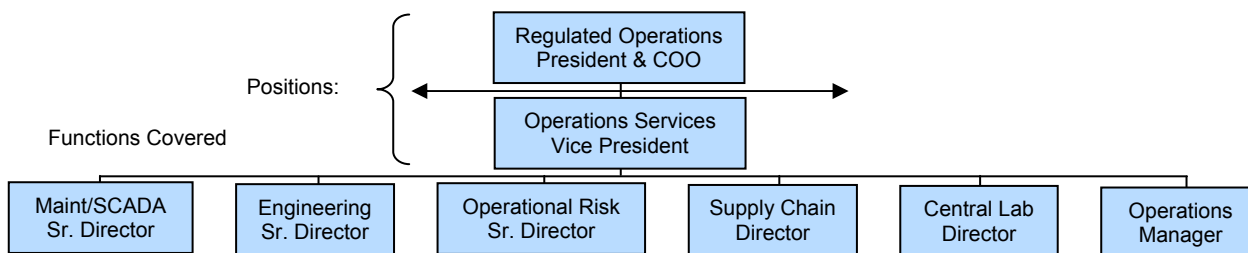
The organization of the operations services department is shown in **Exhibit XIII-1**.² Each of the operational functions within the operations services department is addressed in specific chapters that follow:

- Engineering – Chapter XIV.
- Maintenance and SCADA Services – Chapter XV.
- Innovation and Environmental Stewardship – Chapter XVI.
- Central Laboratory Services – Chapter XVII
- Supply Chain – Chapter XVIII.
- Operational Risk Management – Chapter XIX.

¹ DR 1, Direct Testimony of J. Young in Docket 09-0319, pages 16 and 17

² DR 2 and 241

Exhibit XIII-1
AWWSC Operations Services Organizational Structure



Charges for administration and network support are included in AWWSC's charges for this functional grouping. As shown in **Exhibit XIII-2**, AWWSC charged IAWC \$1,268,933 for operations services including network operations activities in 2010.³

Exhibit XIII-2
AWWSC 2010 Charges for Operations Services, Administrative and Network Support

Business Unit – Function	Position	Labor Hours	IAWC Charges	
032011 CORP-Chief Operating Officer	President AW Services VP Operations Services Manager O&M Manager O&M Director Process & Syst. Executive Assistant	172 191 197 12 4 177	\$ 215,557	
032026 CORP – Regulated Operations	Reg. Ops Pres. & COO Executive Assistant	193 183		
032024 Corp-Western Division Operations	SVP Western Division Executive Assistant	415 110		
Subtotal of Executive Services		1654		\$527,968
033005 WE-Administration	Executive Assistants	256		\$ 21,938
033505 CE-Administration	Executive Assistants	252		\$ 427,442
Subtotal of Administration Services:		508	\$449,380	
032023 CORP – Eastern Division Operations	Executive Assistant	1	\$ 89,424	
035005 SE – Administration				
035014 SE – Engineering				
036501 NE – Productions				
035503 ED – Customer Relations				
035002 SE – Network				
Subtotal of Eastern Division Operations Charges to IAWC		1	\$89,424	
Total – Executive Managers and Assistants		2163	\$1,066,772	
033502 CE-Network	Manager Sr. Engr. Project Mgr.	466 2080	\$ 202,161	
Total – Network		2546	\$ 202,161	
Total – Operations Services and Network			\$1,268,933	

³ DR 55, confidential

In 2010, AWWSC allocated 1,654 hours of executive and manager time to IAWC to perform governance and management performance oversight, including 470 hours of executive assistant time. AWWSC's Western Division and Eastern Division also allocated 509 hours of executive assistant time to IAWC in 2010.

In 2010, AWWSC allocated 2,546 hours to IAWC for network activities time. Network activities performed during 2010 included the following:⁴

Senior Engineering Project Manager

- Provided Regulatory Compliance oversight for the sanitary sewer collection system. Reported Sanitary Sewer Overflows (SSOs) and responding to Notices of Violation.
- Developed short-term and long-term strategies to reduce or eliminate sewer back-ups and SSOs over time.
- Participated in a national committee that developed a Wastewater Geographic Information System (GIS) Data Model.
- Participated in a national committee to accommodate Wastewater Computer Maintenance Management Systems (CMMS).
- Assigned sanitary sewer cleaning work to two two-man sanitary sewer-cleaning crews and followed up on the issues they encountered.
- Worked ICC tariff revisions for sanitary sewers.
- Hired a contractor to clean and televise approximately 76,000 linear feet (LF) of sanitary sewer.
- Hired a contractor to conduct building inspections on homes in the Country Club sanitary sewer collection system that had unauthorized connections in the past.
- Hired a contractor to install a flow meter on the Country Club sanitary sewer collection system.
- Provided Regulatory Compliance assistance for the Wastewater Treatment Facilities as needed.

Manager, Non-Revenue Water

- Analyzed collected data to formulate a water loss program. Maintained an Excel spreadsheet consisting of actual water loss, to determine the estimated water loss within IAWC's infrastructure.
- Trained personnel in water loss control. Visited the local districts, listened to their concerns and demonstrated methods for being more proactive with their water loss issues.
- Set up training for sounding equipment for a proactive approach to identifying infrastructure leaks.
- Worked with vendors to ensure IAWC received the proper equipment needed.
- Worked with district leads to assist in combating non-revenue water issues.
- Performed water audits for all districts using America Water Works Association (AWWA) software.
- Arranged leak surveys if needed by outside source.

- Obtained bids and arranged for an outside vendor to do a leak survey for districts.
- Attended and participated in AWWA water loss control committee meetings.

B. TASKS PERFORMED

To complete the work in this area, NorthStar performed the following tasks:

1. Determined the 2010 cost of services obtained from AWWSC for operations services and Network activities charged to IAWC.
2. Reviewed existing policies and procedures for allocating governance and executive management costs.
3. Determined the charges to IAWC by AWWSC on a business unit and sub-function basis, for direct charges, allocated charges and overhead costs.
4. Reviewed documentation for functions charged and allocated to IAWC.
5. Reviewed the relevant portions of IAWC's testimony, exhibits and supporting documentation from Docket 09-0319 specific to operations services.
6. Identified services and evidence of controls over AWWSC costs.
7. Determined whether reports and documentation included in the testimony provide reasonable support for the costs charged to IAWC for the AWWSC services.
8. Evaluated the functions performed by AWWSC operations services for outsourcing research.
9. Contacted potential competitive service providers to obtain pricing for specific groups of sub-services.
10. Obtained other estimates for the cost of the various groups of sub-services from industry associations, aggregated industry data, salary studies, competitive research from other states or industries, and other sources.
11. Compared the competitive cost of services to the AWWSC charges to IAWC in 2010.
12. Developed conclusions regarding the reasonableness of prices and value of the services provided by AWWSC, given competitive pricing, externalities and unique factors.
13. Prepared a task report on the AWWSC operations services competitive evaluation.

C. RESULTS

1. AWWSC's charges to IAWC for executive assistant support exceeded the competitive market by \$401,756 in 2010.

- In 2010, AWWSC charged IAWC \$449,380 for 508 hours of executive assistant time, overhead and expenses. Based upon the charge detail shown in **Exhibit XIII-3**, most of these charges were for general and benefit overhead.⁵

Exhibit XIII-3
IAWC Charges for Executive Assistant Administration

	033005 WE-Administration	033505 CE-Administration
Grand Total	\$21,938	\$427,442
Labor Hours Charged	256	252
501200 Labor	\$2,112	-\$961
504500 Other Welfare Maintenance		\$1,731
504610 Employee Awards		\$168
534998 Benefit Overhead	\$7,664	\$98,366
534999 General Overhead	\$12,121	\$301,891
541000 Rents-Real Property		\$461
541400 Rents-Equipment		\$6,009
550000 Transportation IT-Admin		\$175
550001 Transportation Lease Cost		\$6,455
550002 Transportation Lease Fuel		\$2,094
550003 Transportation Lease Maintenance		\$635
575000 Miscellaneous		\$6
575002 Misc General Office		\$30
575100 Bank Service Charges		\$1
575220 Community Relations		\$32
575281 Dues/Membership Nondeductible		\$2,051
575340 Employee Expense	\$40	\$911
575342 Employee Exp Conf/Registration		-\$2,088
575350 Meals Deduct	\$0	-\$745
575351 Meals Non Deduct	\$0	-\$745
575620 Office & Admin Supplies		\$2,881
575625 Overnight Shipping		\$3,587
575660 Postage		\$3,050
575670 Relocation Expenses		\$17
575740 Telephone		\$68
575741 Cell Phone		\$1,880
575998 P-Card Undistributed		-\$271
760200 Other Income Deductions		-\$247

- Based on information obtained from three firms, compensation for executive assistant positions range from \$40,000 to \$70,000 per year. The average compensation (\$55,000), fully loaded at IAWC rates (52.4 percent⁶), would be \$42 per hour.⁷

⁵ DR 55, confidential

⁶ DR 154

⁷ DR 154, 325, 400 and NorthStar analysis

- Compensation for 508 hours of executive assistant time at commercially competitive rates would have been approximately \$21,336 while IAWC was charged \$423,092 for labor and overheads and \$26,288 for expenses.
- Compared to estimate charges from potential outsource providers, IAWC was charged \$401,756 over competitive rates.

2. AWWSC inappropriately charged IAWC \$89,382 for overhead expenses incurred by Eastern Division Operations.

- IAWC was charged one hour of labor by the Eastern Division Operations group for setting up and coordinating meetings.⁸
- The Eastern Division does not normally provide services to IAWC⁹ and IAWC did not incur any charges from the Eastern Division in 2009 or 2011.¹⁰
- Based upon competitive rates, a fully loaded executive assistant time for one hour would have been \$42, as discussed above. This is comparable to the labor charge shown in **Exhibit XIII-4** as “501210 Labor Non Scheduled Overtime” in the amount of \$42.
- As shown in **Exhibit XIII-4**, IAWC was charged \$89,382 by eastern division for general and benefit overhead amounts and employee expenses.

Exhibit XIII-4
2010 Eastern Division Charges to IAWC¹¹

Eastern Division Operations	
Total	\$89,424
Labor Hours Charged	1
501210 Labor Non Scheduled Overtime	\$42
504100 Group Ins Maintenance	\$4
504500 Other Welfare Maintenance	\$21
534998 Benefit Overhead	\$74,934
534999 General Overhead	\$13,673
575000 Miscellaneous	\$192
575340 Employee Expense	\$104
575350 Meals Deduct	\$14
575351 Meals Non Deduct	\$14
575670 Relocation Expenses	\$19
575741 Cell Phone	\$138
575998 P-Card Undistributed	\$270

⁸ DR 156

⁹ DR 1, Direct Testimony of J. Young in Docket 09-0319, page 9 at 198.

¹⁰ DR 55, confidential

¹¹ DR 55, confidential

3. AWWSC's charges to IAWC for network services support exceeded IAWC's own rates for network services by \$101,204 in 2010.

- Work activities performed by AWWSC network personnel are similar in nature to those conducted by dedicated IAWC network personnel.
- AWWSC charged IAWC \$202,161 for network services at an average rate of \$78.49 per hour for labor and overheads¹², as shown in **Exhibit XIII-5**.¹³

Exhibit XIII-5
2010 AWWSC Network Charges to IAWC

033502 CE-Network	
Grand Total	\$202,161
Labor Hours Charged	2546
501200 Labor	\$128,182
501711 Incentive Plan-Off-Annual	\$18,505
504500 Other Welfare Maintenance	\$1,515
504670 Training	\$16
507100 401k	\$2,976
508101 Defined Contribution Plan	\$987
534998 Benefit Overhead	\$45,537
534999 General Overhead	\$2,127
550000 Transportation IT-Admin	\$8
575000 Miscellaneous	\$367
575280 Dues/Membership Deductible	\$117
575340 Employee Expense	\$984
575342 Employee Exp Conf/Registration	\$289
575350 Meals Deduct	\$50
575351 Meals Non Deduct	\$50
575620 Office & Admin Supplies	\$16
575740 Telephone	\$162
575741 Cell Phone	\$273

- In 2010, IAWC network personnel worked 446,678 hours, including regular, overtime, holiday, vacation, and sick time. The fully loaded labor cost for IAWC network functions in 2010 was \$17,304,000, or an average fully loaded labor rate of \$38.74.¹⁴
- Had the 2,546 hours of services provided by AWWSC been provided by IAWC network personnel, the cost would have been only \$98,632 for a labor cost savings of approximately \$101,204.

¹² \$202,161 total charges, less \$2,316 for expenses, divided by 2,546 hours provided by AWWSC network services

¹³ DR 55, confidential

¹⁴ DR 325

4. AWWSC's charges to IAWC for executive management services were \$318,119 greater than the comparable cost of IAWC executive management in 2010.

- AWWSC charges for "032011 CORP-Chief Operating Officer" and "032026 CORP-Regulated Operations" combine the charges associated with multiple executive and management positions (see Exhibit XIII-2.)¹⁵
- In 2010, AWWSC charged IAWC \$527,968 for 1184 hours of executive time and 470 hours of executive assistant time. Removing expenses and executive assistant time at \$42 per hour, executive services were provided at an average rate of \$361.21 per hour.¹⁶
- The average fully loaded labor rate for the IAWC President and the VP of Operations, executive positions that currently perform comprehensive governance, policy and oversight functions similar to those provided by the corporate operations services management group, including the AWK COO and the AWK President of Regulated Operations, was \$92.53 per hour.¹⁷
- As an outsourcing alternative to AWWSC services at IAWC rates, IAWC executive management roles, responsibilities and resource levels described below could be augmented to provide additional oversight.
 - The IAWC President has overall responsibility for the day-to-day operations including regular contact with the VP of Operations, the Director of Engineering, the Director of Field Services, and the Director of Production and provides guidance to them in carrying out their duties. The President also leads the development of strategic and annual goals and objectives for IAWC and administers policies and procedures as approved by the BoD of IAWC and ensures that these goals and objectives are achieved. Along with other IAWC officers and senior staff, the President represents IAWC before governmental and regulatory agencies. Along with others, the President formulates financial objectives and budgets and provides the direction necessary to meet those objectives while remaining within budgetary guidelines.
 - The IAWC President is part of the management team that establishes employee levels, working conditions, and safety requirements within guidelines established by law and the BoDs. The IAWC President has responsibilities associated with developing and controlling IAWC's operating, maintenance and capital budgets, and provides direction in the areas of construction, purchases or other acquisitions, and operation, maintenance and protection of all property, facilities and equipment required to maintain water quality standards and continuity of service.¹⁸
 - The IAWC VP of Operations is responsible for the oversight of all operational areas of IAWC, including water quality, field operations, production and

¹⁵ DR 55, confidential

¹⁶ DR 55, confidential and NorthStar analysis of outsourced executive assistant labor cost

¹⁷ DR 400, total loaded labor of two IAWC executive positions divided by 4160 hours.

¹⁸ DR 1, Direct Testimony of K. Teasley, Docket 09-0319 pages 2 and 3.

maintenance for water and wastewater. This oversight role includes the development of operations strategies to improve business performance through employee development and technology implementation. This role also ensures that operational integrity is maintained, including regulatory compliance in all facilities. This executive position is responsible for the implementation of best operating practices to promote continuous improvement, operational efficiencies, innovation and excellent customer service. The VP of Operations provides strategic and operational input to annual business plans, control of operational budgets, and ensures that operational and financial targets are met or exceeded.¹⁹

- In 2010, if IAWC had provided the same level of service as AWWSC operations services management group did (i.e., 1,184 hours and \$427,675) at the IAWC internal cost, the charges to IAWC would have been approximately \$109,556, for a difference of approximately \$318,119.²⁰

¹⁹ Direct Testimony of B. Suits, IAWC Exhibit 2.00 11-2-2011

²⁰ DR 55, confidential and NorthStar analysis of charges net executive assistant and expenses.

XIV. ENGINEERING

This chapter covers the engineering functions performed by AWWSC for IAWC. In 2010, IAWC was charged \$1.3 million for these services

A. BACKGROUND

The AWWSC engineering group performs functions in the areas of asset planning and capital investment management (CIM), technical services and design management, and project delivery and construction management. The organization of the engineering group is shown in **Exhibit XIV-1**, and the roles of each of the sub-groups are described below.

- The Asset Planning Group maintains the water and wastewater system planning standards and provides technical resources to the regulated operating companies as needed to support or perform system-specific capital improvement master planning. The output of the asset planning effort is the primary input to the operating companies' and AWWSC's Capital Investment Programs (CIP), and the Engineering function is charged with establishing and administering the corresponding CIM Policy, Practice and Standards used to implement the CIP.¹
- The technical services team, within engineering is responsible for maintaining the technical standards, specifications, and approved product listings applicable to the water system physical assets. This team also provides specialized engineering expertise in the areas of treatment process selection and design, and the structural, geotechnical, electrical and control system disciplines. Resources from this group are used, upon request, to augment operating company staff to study alternatives and develop conceptual design solutions and manage the detailed design effort for larger or more complex capital projects.
- The project delivery and construction management team is charged with developing and maintaining the various project delivery models and supporting documents needed to satisfy the range of projects (size, complexity, and schedule drivers) to be delivered in the CIP. Project delivery methods include traditional design-bid-build delivery and a range of alternative project delivery methods. The project delivery team provides guidance and training on the selection of project delivery methods. Resources from this group are used to augment operating company staff on larger and more complex projects to develop bidding and contract documents, administer the bidding and award of contracts and to manage the construction, field inspection and facility commissioning tasks.²

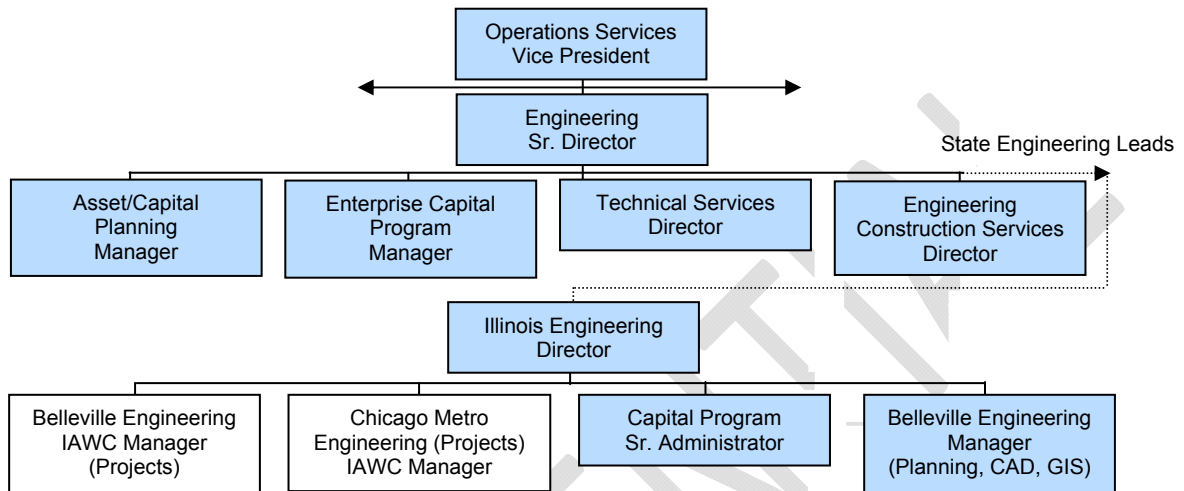
The AWWSC engineering department reports directly to the operations services' VP. The department primarily operates from Voorhees, New Jersey with a staff of 34 personnel. The Illinois Engineering Director reports to the IAWC President and on a "matrix"

¹ DR 1, Direct Testimony of J. Young in Docket 09-0319, page 17 at 396.

² DR 1, Direct Testimony of J. Young in Docket 09-0319.

relationship to the AWWSC Engineering Sr. Director. Five additional AWWSC engineering resources report to the Illinois Engineering Director.³

Exhibit XIV-1
AWWSC Engineering Department⁴



Note: IAWC personnel are shown in white.

IAWC received charges of \$1,346,982 from six AWWSC business unit charge centers for engineering support in 2010, as shown in **Exhibit XIV-2 and Exhibit XIV-3**.⁵ Both IAWC and AWWSC contracted for engineering services during 2010 charged separately to IAWC.

A summary of engineering charges for Asset Management, Planning, and Technical Services from AWWSC's Voorhees, NJ office is shown in **Exhibit XIV-2**. A summary of AWWSC engineering charges from the Western Division is provided in **Exhibit XIV-3**.⁶

Exhibit XIV-3 also shows IAWC charges from American Water Engineering (AWE) an unregulated affiliate that provided engineering support through AWWSC to IAWC.

Nearly all of the engineering support hours charged to IAWC by AWWSC were direct charges to capital projects. During 2010, IAWC was charged a total of 20,248 hours of engineering support services by the AWWSC engineering function. Fully loaded labor charged, including general and benefits overhead, was \$61.95 per hour.⁷

³ DR 2, 241 and IS 31

⁴ DR 2 and 241

⁵ DR 55, confidential

⁶ DR 55, confidential

⁷ DR 55, confidential

Exhibit XIV-2
AWWSC Engineering Support Charges to IAWC

	032065 CORP-Asset Management	036550 CORP-COE- Engineering	036551 CORP-COE- Technical Services
Grand Total	\$210,725	\$123,012	\$168,955
Total Hours Charged	3,078	1,311	1,699
Labor and Associated Overheads	\$195,663	\$109,912	\$131,440
501200 Labor	\$128,024	\$59,744	\$76,406
501711 Incentive Plan-Off-Annual	\$18,780	\$8,330	\$10,344
504500 Other Welfare Maintenance	\$170	\$341	\$19
504660 Tuition Aid	\$264	\$74	\$0
504670 Training		\$23	
507100 401k	\$2,394	\$1,886	\$1,263
508101 Defined Contribution Plan	\$4,354	\$1,740	\$1,895
534998 Benefit Overhead	\$39,176	\$33,588	\$39,502
534999 General Overhead	\$2,501	\$4,186	\$2,011
Other Charges	\$15,061	\$13,101	\$37,518
531000 Contract Services-Engineering	\$699		
533000 Contract Services-Legal	\$10		
535000 Contract Services-Other	\$21	\$6	
537000 Contract Services-Intercompany			\$24,535
550001 Transportation Lease Cost		\$29	
550002 Transportation Lease Fuel			\$88
550003 Transportation Lease Maintenance		\$217	\$30
550005 Mileage Reimbursement Personal Vehicle	\$36	\$249	\$135
575000 Miscellaneous	\$3	\$39	\$149
575002 Misc General Office	-\$9		\$140
575030 Advertising			\$35
575280 Dues/Membership Deductible	\$184	\$418	\$1,999
575340 Employee Expense	\$5,072	\$9,429	\$5,896
575342 Employee Exp Conf/Registration	\$275	\$328	\$622
575350 Meals Deduct	\$727	\$326	\$285
575351 Meals Non Deduct	\$727	\$326	\$285
575620 Office & Admin Supplies	\$1,711	\$482	\$554
575715 Software Licenses & Support	\$4,218	\$143	\$1,701
575740 Telephone	\$740	\$160	\$30
575741 Cell Phone	\$497	\$949	\$1,034
575998 P-Card Undistributed	\$150	\$0	\$0

Exhibit XIV-3
AWWSC Western Division and CORP-AWE Engineering Charges to IAWC

	033014 WE-Engineering	033514 CE-Engineering	032089 CORP-AWE Pass-Thru
Grand Total	\$4,665	\$778,294	\$61,331
Total Hours Charged	n/a	13,384	776
Labor and Associated Overheads	\$4,462	\$764,835	\$61,312
501200 Labor	\$1,373	\$530,235	\$37,563
501210 Labor Non Scheduled Overtime		\$3,990	
501711 Incentive Plan-Off-Annual		\$67,397	\$5,576
504100 Group Ins Maintenance		\$381	
504500 Other Welfare Maintenance		\$5	\$7
504610 Employee Awards		\$24	
504620 Employee Physical Exam		\$164	
504670 Training		\$23	
507100 401k		\$16,067	\$929
508101 Defined Contribution Plan		\$25,544	
534998 Benefit Overhead	\$2,933	\$115,124	\$17,237
534999 General Overhead	\$156	\$5,881	
Other Charges	\$202	\$13,458	\$17
550000 Transportation IT-Admin		\$127	
550001 Transportation Lease Cost		\$553	
550002 Transportation Lease Fuel		\$267	
550003 Transportation Lease Maintenance		\$15	
550005 Mileage Reimbursement Personal Vehicle		\$29	
575002 Misc General Office		\$42	
575241 Co Dues/Membership Nondeductible		\$26	
575280 Dues/Membership Deductible		\$412	
575340 Employee Expense		\$8,504	- \$1
575350 Meals Deduct		\$494	
575351 Meals Non Deduct		\$494	
575620 Office & Admin Supplies		\$27	
575740 Telephone	\$18	\$285	\$18
575741 Cell Phone		\$2,645	
575998 P-Card Undistributed	\$184	-\$462	

B. TASKS PERFORMED

To complete the work in this area, NorthStar performed the following tasks:

1. Determined the 2010 cost of services obtained from AWWSC to IAWC for engineering services.
2. Reviewed existing policies and procedures for allocating engineering costs such as technical support and asset management.
3. Determined the charges to IAWC by AWWSC, on a business unit and sub-function basis, for direct charges, allocated charges, and overhead costs.

4. Reviewed documentation for functions charged and allocated to IAWC.
5. Reviewed the relevant portions of the IAWC's testimony, exhibits, and supporting documentation from Docket 09-0319 specific to engineering services.
6. Identified services and evidence of controls over AWWSC costs.
7. Determined whether reports and documentation included in the testimony provide reasonable support for the costs charged to IAWC for the AWWSC services.
8. Evaluated the functions performed by AWWSC engineering for outsourcing research.
9. Reviewed data responses to identify metrics, deliverables, and service parameters relative to the services or sub-services provided.
10. Requested and reviewed data on volume and level of services provided by AWWSC and external engineering contractors to obtain estimates of the cost of services used by IAWC.
11. Reviewed costs of contracted engineering services procured by AWWSC and IAWC.
12. Compared the 2010 contracted engineering services costs by AWWSC to IAWC.
13. Developed conclusions regarding the reasonableness of prices and value of the services provided by AWWSC, given competitive pricing, externalities and unique factors.
14. Prepared a task report on the AWWSC Engineering competitive evaluation.

C. RESULTS

1. **IAWC and AWWSC obtain engineering support services from the competitive market on a regular basis.**
 - IAWC and AWWSC's plan for engineering services anticipates significant levels of contracted engineering services each year.
 - In 2010, the plan showed IAWC would spend \$2,272,032 for contracted engineering services and AWWSC (all regulated companies) would spend \$17,938,919 for contracted engineering services.⁸
 - Actual spending by both AWWSC and IAWC for contracted engineering services was greater than the planned amounts.

⁸ DR 230

2. Generally, engineering support services obtained by IAWC from AWWSC were at rates lower than the competitive alternatives.

- NorthStar reviewed the bids received from the four outside engineering firms contracted by IAWC and AWWSC in 2010. The bids reflected a variety of projects and engineering services.
- The total number of hours (4,850) proposed by these engineering services firms was offered at an average rate of \$115.96 per hour.
- Fully loaded labor rates for engineering services from AWWSC, including general and benefit overheads, were \$62.60 per hour during 2010 as shown in **Exhibit XIV-4**.

Exhibit XIV-4
2010 AWWSC Fully Load Engineering Costs⁹

Cost Center	Hours	Fully Loaded Labor Charges
032065 CORP-Asset Management	3,078	\$195,663
036550 CORP-COE-Engineering	1,311	109,912
036551 CORP-COE Technical Services	1,699	131,440
033014 WE-Engineering		4,462
033514 CE-Engineering	13,384	764,835
032089 CORP-AWE	776	61,312
Total	20,248	\$1,267,624
Hourly Rate		\$62.60

- AWWSC charged IAWC for engineering services at an average rate of \$62.60 per hour. If the same services were obtained in the competitive market, IAWC would have paid approximately \$116 per hour or nearly twice as much as the AWWSC rate.

⁹ DR 55, confidential

XV. MAINTENANCE SERVICES

This chapter covers the maintenance and SCADA functions performed by AWWSC for IAWC. In 2010, IAWC was charged \$402,700 for these services.¹

A. BACKGROUND

The maintenance and SCADA services department provides technical services in the areas of maintenance management, equipment testing and diagnostics, and SCADA systems support.

The resources and expertise in this department supplement IAWC resources and are charged with implementing the AWWSC's Reliability Centered Maintenance (RCM) and SCADA strategies. RCM considers service level requirements, related asset criticality, asset failure cost and other factors, in order to develop a maintenance plan. RCM also includes the assessment of asset condition, performance of equipment diagnostic testing and predictive-maintenance tasks. The AWWSC maintenance services department provides support services that include infrared thermography, advanced vibration analysis, motor winding analysis, insulating and lubrication oil testing, ultrasonic testing, as well as other more traditional electrical and mechanical testing and diagnostic techniques. When deficiencies are identified through the diagnostic testing, the maintenance services department also performs the needed repairs. The maintenance services department recently completed the design and configuration of a CMMS for the operating companies. Currently, around 7,000 physical assets are being managed within the AWW system, and the expanded deployment of this system is continuing. IAWC began building its database for the system in 2009.

SCADA services provided by this group include setting strategy, technical and equipment standards and providing programming services and field technician support to IAWC. These services include ongoing equipment and control system calibration, maintenance and repairs, emergency response support during operational events and providing system configuration input, design support and control system programming for new and expanded facilities.²

Most of the maintenance services personnel that support IAWC work out of the Western Division organizational unit and are local to the Illinois/Missouri region. Two SCADA resources personnel support IAWC and live in Illinois. AWWSC allocated 6,115 hours or 2.9 FTE resources for maintenance and SCADA support to IAWC in 2010 at a total cost of \$402,700.³ An organization chart for the AWWSC maintenance and SCADA services department is shown in **Exhibit XV-1**.⁴

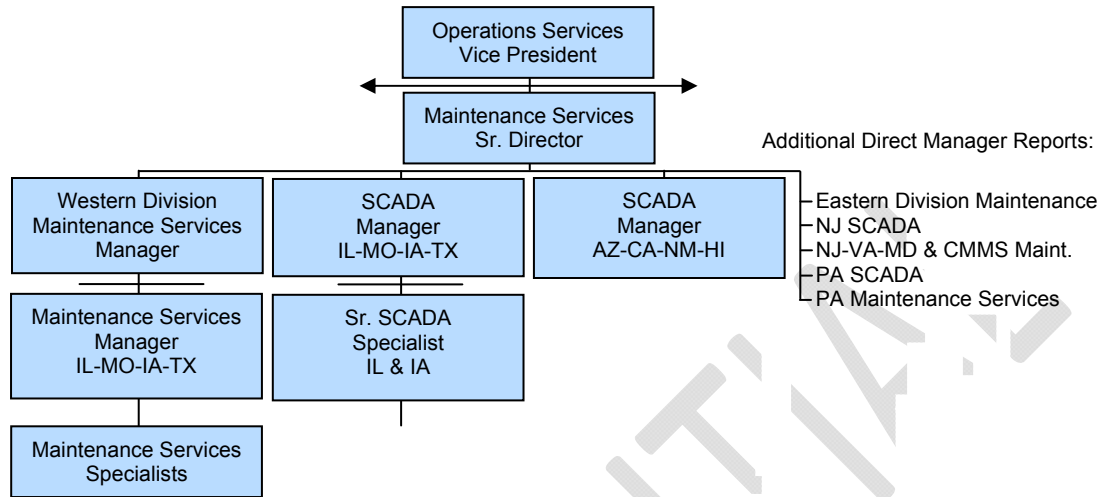
¹ DR 55, confidential

² DR 1, Direct Testimony of J. Young in Docket 09-0319

³ As identified in Exhibit III-10

⁴ DR 2 and 241

Exhibit XV-1
AWWSC Maintenance and SCADA Services Department



AWWSC Maintenance and SCADA resources that charged to IAWC in 2010 are shown in **Exhibit XV-2**.⁵

Exhibit XV-2
AWWSC Hours Charged to IAWC for Maintenance and SCADA

Business Unit	Title	2010 Hours
032016 CORP-Maintenance Services		
	Administrative Assistant	65
033016 WE-Maintenance		
	Director Maintenance	186
033516 CE-Maintenance		
	Engineer Controls (SCADA)	1628
	Sr Specialist Maintenance Services	254
	Sr Specialist Maintenance Services	285
	Manager Maintenance Services	427
	Manager Controls (SCADA)	1174
	Sr Administrator CMMS	29
	Sr Specialist Maintenance Services	287
	Sr Specialist Maintenance Services	1585
035016 SE-Maintenance		
	Sr Director Maintenance & SCADA Svcs	177
036516 NE-Maintenance		
	Director Maintenance	19
Total Hours Charged by AWWSC in 2010		6115

⁵ DR 55, confidential

AWWSC charges to IAWC for maintenance and SCADA services are shown in **Exhibit XV-3**.⁶ The average hourly charge to IAWC for these services excluding expenses was \$59.57 per hour.⁷

Exhibit XV-3
AWWSC 2010 Charges for Maintenance and SCADA Services

	032016 CORP- Maintenance Services	033016 WE- Maintenance	033516 CE- Maintenance	035016 SE- Maintenance	036516 NE- Maintenance
Grand Total	\$1,661	\$22,090	\$354,750	\$22,297	\$1,902
Total Hours Charged	65	186	5668	177	19
501200 Labor		\$11,203	\$199,265	\$13,947	\$1,307
501210 Labor Non Scheduled Overtime			\$2,811		
501711 Incentive Plan-Off-Annual		\$1,977	\$14,922	\$4,101	\$276
504100 Group Ins Maintenance			\$545		
504500 Other Welfare Maintenance	\$301		\$101		
504670 Training			\$576	\$111	
507100 401k		\$211	\$2,898	\$207	\$52
508101 Defined Contribution Plan			\$3,985		\$76
534998 Benefit Overhead	\$563	\$3,466	\$92,383	\$1,833	\$45
534999 General Overhead	\$159	\$228	\$6,501	\$160	\$25
Other expense charges:					
520100 Materials & Supplies Operations			\$2,585	\$57	
535000 Contract Services-Other		\$676	\$435		
550000 Transportation IT-Admin			\$30		
550001 Transportation Lease Cost			\$990		
550002 Transportation Lease Fuel			\$109		
550003 Transportation Lease Maintenance			\$210		
550005 Mileage Reimbursement Personal Vehicle		\$14	\$675	\$101	\$25
575000 Miscellaneous		\$75	\$152		
575002 Misc General Office			\$40	\$18	
575240 Co Dues/Membership Deduct	\$417			\$19	
575242 Co Dues Deduct AWWA		\$22			
575280 Dues/Membership Deductible			\$144		
575340 Employee Expense	\$6	\$3,272	\$11,218	\$1,368	\$6
575342 Employee Exp Conf/Registration		\$500	\$4,756	\$12	
575350 Meals Deduct	\$68	\$176	\$1,943	\$138	\$0
575351 Meals Non Deduct	\$68	\$177	\$1,943	\$138	\$0
575620 Office & Admin Supplies	\$78	\$92	\$565	\$87	
575625 Overnight Shipping			\$50		
575715 Software Licenses & Support			\$67		
575740 Telephone			\$182		\$89
575741 Cell Phone			\$4,662		
575998 P-Card Undistributed	\$0	\$0	-\$99	\$0	
675250 Comp Equip Hardware			\$106		

⁶ DR 55, confidential

⁷ Total cost less expenses divided by hours (((\$407,700 - \$38,408) ÷ 6115) = \$59.57 per hour

B. TASKS PERFORMED

To complete the work in this area, NorthStar performed the following tasks:

1. During 2010, determined the cost of services obtained from AWWSC to IAWC for maintenance and SCADA support.
2. Reviewed existing policies and procedures for allocating maintenance services costs.
3. Determined the charges directed to IAWC by AWWSC, on a business unit and sub-function basis, for direct charges, allocated charges and overhead costs.
4. Reviewed documentation for functions charged and allocated to IAWC.
5. Reviewed the relevant portions of the IAWC's testimony, exhibits and supporting documentation from Docket 09-0319 specific to maintenance services.
6. Identified services and evidence of controls over AWWSC costs.
7. Evaluated the functions performed by AWWSC for outsourcing research.
8. Contacted potential competitive service providers to obtain pricing for maintenance services.
9. Compared the competitive cost of services to the AWWSC costs.
10. Developed conclusions regarding the reasonableness of prices and value of the services provided by AWWSC, given the competitive pricing.
11. Prepared a task report.

C. RESULTS

1. **Maintenance and SCADA support services provided by AWWSC and charged to IAWC would not be reduced by potential outside contract service providers.**
 - Twelve commercial maintenance and technical support providers were contacted to obtain competitive data.
 - None of the competitive service providers offered their services at rates less than \$105 per hour.
 - AWWSC maintenance services are provided to IAWC at an economic advantage when compared to contracted services. Outsourced service provider rates were nearly twice AWWSC labor charges of \$59.57 per hour.

XVI. ENVIRONMENTAL SERVICES

This chapter covers the environmental management support function performed by AWWSC for the AWK operating companies including IAWC. In 2010, IAWC was charged \$238,560 for environmental services.

A. BACKGROUND

AWWSC's innovation and environmental stewardship department is a team of scientists and environmental engineers charged with setting Environmental Policy for AWK, and directing the AWK's programs for water quality, environmental compliance and stewardship, and applied research. The department is also responsible for regulatory interface at the national level (for example, with the United States Environmental Protection Agency (USEPA)), including the direct input and collaboration on new or updated water quality and environmental regulations. This team also conducts facility environmental audits and provides expert resources to operations when needed to address difficult treatment, water quality or other complex environmental issues beyond the technical reach and resource capabilities of the operating companies. The applied research efforts of this function support the operating companies and include nationally recognized work in the areas of drinking water quality, infrastructure needs, and wastewater.¹

The department resources include a director, three managers, and 12 engineers, scientists and analysts.² Within the department, environmental governance and oversight for corporate environmental policy and implementation is provided by one of the managers and two auditors, one located in Pennsylvania and one water quality auditor in Illinois. The applied environmental research group is involved in various research efforts to examine new technologies within the water industry and existing technology opportunities outside the water industry. Some of this research effort is funded from government and various private research agencies. AWWSC research personnel team up with unaffiliated engineering and consulting firms to perform assignments in the commercial marketplace. These applied research projects include the following:³

- Cross Connect and Backflow. This project investigated techniques to detect and control cross connections and backflow into distribution systems. The work was partially funded by the Water Research Foundation (WRF). The University of Southern California Center for Cross Connection Control and Backflow participated on this project and received some of the WRF funding. AWWSC was the project manager, and conducted some of the pipe loop studies. AWWSC resources also conducted the evaluation of the on-line water quality analyzers and conducted the analysis of backflow water meters. The project was completed in 2010.

¹ DR 1, testimony of J. Young Docket 09-0319.

² DR 2 and 241

³ DR 246

- Auto Meter Reading Management Study. This project developed guidance for best practices related to the selection, installation and operation of automatic metering reading. The work was partially funded by the WRF. Collaborators on the project included a consultant and expert on meter reading automation. One AWWSC employee worked on this project. This project number was also used to develop an Automated Meter Reading/Automated Metering Infrastructure (AMR/AMI) strategy for AWK.
- Manage Coliforms and E Coli. This project evaluated utility experiences and techniques to determine the source and control of coliform bacteria in drinking water systems. The project developed a set of best practices for investigating and mitigating bacteriological problems. The work was partially funded by the Water Research Foundation and HDR Engineering, Ecole Polytechnique de Montreal, Dalhousie University, and Clancy Environmental Consultants were collaborators on the project. This project was completed in 2009.
- Leak Repair Study. This study used an innovative acoustic leak detection monitor to detect pipe leakage and subsequent pipe failure (breaks). The work was partially funded by the WRF. Some of the project monies allowed researchers at the Canadian Research Council to conduct analyses of pipe corrosion. Two vendors, Flowmetrix and Hexagram also provided technical support to the project. The work was largely completed in 2010, and a few hours were charged in 2011.
- Cryptosporidium Infectivity. This study examined the occurrence and concentration of infectious Cryptosporidium oocysts in treated reclaimed water. Additional funding was provided to also genotype the strains of Giardia detected in treated water. The project conducted a risk analysis to demonstrate the safety of treated supplies. The work was partially funded by the WateReuse Foundation and performed in collaboration with Tufts University. Project funds were also used to pay for a number of AWWSC interns who worked on various aspects of the project.
- Awwa Research Foundation (AwwaRF) #4152 – Pressure/Water Quality (WQ). This study developed a quantitative microbial risk model to evaluate mitigation options for distribution system low and negative pressure events to improve drinking water safety. The work was partially funded by the WRF and paid for the collaboration of a risk modeler from the Dutch National Institute of Health. The study was completed in 2010.
- Optimized Distribution Systems. This project was supported by the Partnership for Safe Water to develop criteria for an optimized program for distribution system operations. The work was partially funded by the WRF and performed in collaboration with HDR Engineering and Jan Routh Associates. In addition, over 150 individuals from across the water industry participated in workgroups to develop best practices for distribution system optimization. The project was completed in early 2010.

- Zinc vs. Non-Zinc P04. This study examined the impact of zinc on distribution system materials. Use of low or non-zinc corrosion inhibitors would reduce operating costs and reduce the discharge of zinc into the environment. The work was partially funded by the WRF and was performed in collaboration with a leading corrosion control expert at Virginia Tech, and CH2M Hill Engineering.
- AwwaRF Sub - Key Asset Data. This project provided a comprehensive dictionary of key asset data that is important in development of a uniform asset management system. The work was partially funded by the WRF and performed in collaboration with Jeff Oxenford Consulting.
- WFR Assessing Biofiltration. This study examined monitoring and control options for managing biologically active filters. Systems will benefit from this project by providing tools and guidance on how to monitor and improve filter performance and effluent quality. The work was partially funded by the WRF and conducted with CDM Consultants. Project funds were also used to pay for a number of AWWSC interns who worked on various aspects of the project.
- WRF Disinfection Guidelines. This project evaluated the requirements for disinfecting reclaimed water following membrane bioreactor treatment and sought to reduce disinfection expenses. The work was partially funded by the WRF and performed in collaboration with MWH Engineering. Project funds were also used to pay for a number of interns who worked on various aspects of the project.
- WRF #4156 - Nitrification. The project collaborated with the University of Wisconsin to evaluate advanced technologies for measurement of nitrifying bacteria in chloraminated water systems. The work was partially funded by the WRF. AWWSC environmental management's role was to collect and produce water and biofilm samples and the University of Wisconsin performed the analysis.
- Plastic Pipe Leak Management. These project-evaluated technologies for small systems to cost effectively locate plastic pipes and monitor and control leaks. The work was partially funded by the WRF and performed in collaboration with Jeff Oxenford Consulting.
- Main Break Studies. This project developed a risk-based approach for repair and return-to-service following a main break. The objective was to minimize the time out of service and inconvenience to customers. The work was partially funded by the WRF and performed in collaboration with HDR Engineering. Project funds were also used to pay for a number of AWWSC interns who worked on various aspects of the project.
- Biostability in Drinking Water. This project developed goals for water quality stability in the distribution system to reduce bacterial growth, corrosion, and loss of chlorine. It also developed treatment goals for distribution system water quality for which biological filtration systems can be designed.

The department's innovation group is fundamentally a research program, looking for new and innovative technologies outside the water industry. AWWSC does not charge operating companies such as IAWC for this function.⁴

As shown in **Exhibit XVI-1**, AWWSC charged IAWC \$238,560 for 3,024 hours of environmental management support in 2010.⁵

Exhibit XVI-1
2010 Innovation and Environmental Stewardship Charges to IAWC

032066 CORP-Innovation & Environmental Stewardship		033511 CE-Environmental Management
Total IAWC Charges for CY2010	\$217,886	\$20,674
Total Hours Charged	3,024	
501200 Labor	\$115,729	-\$310
501711 Incentive Plan-Off-Annual	\$14,906	
504500 Other Welfare Maintenance	\$374	
504660 Tuition Aid	\$572	
507100 401k	\$2,743	
508101 Defined Contribution Plan	\$1,723	
533000 Contract Services-Legal	\$1,252	
534998 Benefit Overhead	\$65,393	\$18,398
534999 General Overhead	\$10,800	\$810
535000 Contract Services-Other	\$29,690	
541001 Rents-Real Property Intercompany	\$3,836	
541400 Rents-Equipment	\$813	
550005 Mileage Reimbursement Personal Vehicle	\$618	
575000 Miscellaneous	-\$55,123	\$180
575030 Advertising	\$127	
575130 Brochures and Handouts	\$672	
575280 Dues/Membership Deductible	\$647	
575340 Employee Expense	\$7,432	
575342 Employee Exp Conf/Registration	\$5,100	
575350 Meals Deduct	\$579	-\$7
575351 Meals Non Deduct	\$579	-\$7
575620 Office & Admin Supplies	\$5,368	
575625 Overnight Shipping	\$357	
575660 Postage	-\$70	
575670 Relocation Expenses	\$882	
575715 Software Licenses & Support	\$1,685	
575740 Telephone	\$410	\$1,318
575741 Cell Phone	\$635	\$292
810300 Interest Cap Lease-Outside	\$155	

⁴ DR 55, confidential

⁵ DR 55, confidential

B. TASKS PERFORMED

To complete the work in this area, NorthStar performed the following tasks:

1. Determined the 2010 cost of services obtained from AWWSC for innovation and environmental stewardship to provide environmental management support activities to IAWC.
2. Reviewed existing policies and procedures for allocating innovation and environmental stewardship costs.
3. Determined the charges to IAWC by AWWSC on a business unit or sub-function basis, for direct charges, allocated charges and overhead costs.
4. Reviewed the relevant portions of the IAWC's testimony, exhibits, and supporting documentation from Docket 09-0319 supporting innovation and environmental stewardship.
5. Identified services and evidence of controls over affiliate costs by IAWC.
6. Determined whether reports and documentation included in the testimony provide reasonable support for the costs charged to IAWC for environmental management services.
7. Reviewed data responses to identify metrics, deliverables, and service parameters relative to the services or sub-services provided.
8. Requested and reviewed data on volume and level of services provided to obtain estimates of the volume and level of services used by IAWC.
9. Researched industry standards and benchmarks for level of services and cost.
10. Obtained other estimates for the cost of the various groups of sub-services from industry associations, aggregated industry data, salary studies, competitive research from other states or industries, and other sources.
11. Based on research, interviews and other data, developed estimates of competitive prices for as many groups of sub-services as possible.
12. Compared the competitive cost of services to the AWWSC costs.
13. Developed conclusions regarding the reasonableness of prices and value of the services provided by AWWSC, given the competitive pricing and all externalities and unique factors.
14. Prepared a task report.

C. RESULTS

1. IAWC provides input but does not play a strong role in determining research to be performed by AWWSC innovation and environmental stewardship.

- IAWC is consulted on research needs twice yearly at the environmental functional meeting, where progress on current projects is reviewed and future research needs are discussed.
- A weekly research progress update is provided to the director of environmental management and the VP of operations.
- For each competitive research proposal, IAWC is contacted to solicit their input and support. IAWC stated that projects not supported by the operating companies are not pursued.⁶

2. IAWC benefits from AWWSC's economies of scale and funded research that cannot be matched by outsourced services.

- The innovation and environmental stewardship department's charges to IAWC are less than rates charged for applied research projects.
- The department's research programs combine the skills and capabilities of AWWSC resources with academic and unaffiliated nationally recognized consulting firms to secure funding and produce research products in a commercially competitive market.
- The applied research conducted by the department provides a competitive reference for the departments cost and functional capabilities.
- The applied research effort contributed revenue against the operating cost of the department.⁷
 - 2009: \$ 816,585 for 5,640 hours (\$144.78 per hour)
 - 2010: \$ 623,851 for 6,349 hours (\$98.26 per hour)
 - 2011 through June: \$ 347,855 for 7,195 hours (\$48.35 per hour)
- In 2010, \$55,123 of this revenue was credited against the department's charges to IAWC.⁸
- During 2010, the environmental research effort charges to IAWC at \$76.43 (labor and overheads) were less than the rates charged for commercial applied research efforts at \$98.26 per hour.

⁶ DR 395

⁷ DR 397 and 398

⁸ DR 55

XVII. CENTRAL LABORATORY

This chapter covers the water testing services provided to IAWC by AWWSC's Central Laboratory (Lab). In 2010, IAWC was charged \$443,234 for Lab services.

A. BACKGROUND

The AWWSC Lab, located in Belleville Illinois, is a key service provider supporting high quality drinking water to customers and communities. The Lab employs highly skilled scientific personnel and is certified by the Illinois Environmental Protection Agency (ILEPA) and other state water quality certification programs in states where the operating companies provide service. These certifications are done in accordance with the requirements set forth by the National Environmental Laboratory Accreditation Conference. The Lab provides chemical analytical services to assure regulatory compliance, support treatment process control and optimization, maintain and improve distribution system water quality, and address customer inquiries related to water quality. In 2010, using many certified analytical methods, 69,027 water quality tests were conducted by the lab for AWK regulated utility operations, covering more than 100 regulated analytes under the Safe Drinking Water Act (and approximately 200 analytes in total).¹ In addition, 6,100 water quality tests were conducted for third-party commercial clients and 159 tests were conducted for AWK non-regulated affiliates.²

The Lab consolidates all the analytical testing services and the maintenance of test data archives in a single location. Lab services include sample kit scheduling, shipping and management, filing of analytical reports to meet regulatory compliance requirements, comparison of test results to regulatory limits and action levels with immediate issuance of alerts as needed, and the handling of rush or special requests. The Lab works closely with the USEPA and other laboratories to maintain an expert position on challenging and new analytical methods and upcoming regulations.

In 2008, the Lab became one of only 14 laboratories in the country to achieve certification for the testing methods related to Phase 2 of the USEPA Unregulated Contaminant Monitoring Rule (UCMR2). Through these efforts, the Lab is able to provide expert guidance to AWK field personnel for complex water chemistry conditions and analytical requirements for current and new regulations.³

During 2010, the Lab director reported to the VP of operation services and had a staffing level of 34 personnel.⁴ All of the department's personnel work in Belleville, Illinois.

The Lab charged AWK operating companies a total of \$5,011,384 in 2010, net of the revenue from third-party commercial and non-regulated clients. In 2010, IAWC was charged

¹ DR 161 Attachment 1

² DR 194 Attachment 1

³ DR 1, testimony of J. Young in Docket 09-0319.

⁴ DR 2, 55 confidential and 241

\$443,234 by the Lab as shown in **Exhibit XVII-1**.⁵ IAWC received a credit of \$35,229 for revenue from water tests performed for commercial third-parties and non-regulated affiliates. The total 2010 revenue that the Lab received from tests performed for clients other than AWK regulated utilities was \$403,995.⁶

Exhibit XVII-1
2010 IAWC Charges for Lab Services

Description of Charges	034517 – Belleville Central Lab 2010 IAWC Charges
Grand Total	\$443,234
501200 Labor	\$150,612
501210 Labor Non Scheduled Overtime	\$2
501711 Incentive Plan-Off-Annual	\$9,748
504100 Group Ins Maintenance	\$313
504500 Other Welfare Maintenance	\$207
504610 Employee Awards	\$411
504620 Employee Physical Exam	\$14
504670 Training	\$169
507100 401k	\$3,243
508101 Defined Contribution Plan	\$2,863
534998 Benefit Overhead	\$79,556
534999 General Overhead	\$110,375
535000 Contract Services-Other	\$1,077
535001 Contract Services-Temp Employee	\$361
536000 Contract Services-Lab Testing	-\$35,229
541000 Rents-Real Property	\$422
541400 Rents-Equipment	\$746
550001 Transportation Lease Cost	\$2
550002 Transportation Lease Fuel	\$5
550005 Mileage Reimbursement Personal Vehicle	\$27
575000 Miscellaneous	\$735
575002 Misc General Office	\$7,324
575030 Advertising	\$14
575260 Credit Line Fees	\$5
575280 Dues/Membership Deductible	\$174
575340 Employee Expense	\$1,082
575342 Employee Exp Conf/Registration	\$164
575350 Meals Deduct	\$134
575351 Meals Non Deduct	\$134
575460 Grounds Keeping	\$550
575480 Heat - Oil/Gas	\$85
575500 Janitorial	\$1,727
575545 Lab Supplies	\$63,207
575620 Office & Admin Supplies	\$2,991
575625 Overnight Shipping	\$7,921
575660 Postage	\$186
575710 Security Service	\$1,137
575715 Software Licenses & Support	\$520
575740 Telephone	\$1,767
575741 Cell Phone	\$121

⁵ DR 55, confidential

⁶ DR 391

575780 Trash Removal	\$532
675000 Misc Maintenance	\$14,931
675250 Comp Equip Hardware	\$318
675350 HVAC Equipment	\$1,877
810301 Interest Cap Lease-AW02	\$10,677

B. TASKS PERFORMED

To complete the work in this area, NorthStar performed the following tasks:

1. Determined the 2010 cost of services obtained from AWWSC for Lab testing for IAWC.
2. Reviewed existing policies and procedures for allocating Lab costs.
3. Determined the charges to IAWC by AWWSC on a business unit and sub-function basis, for direct charges, allocated charges and overhead costs.
4. Reviewed documentation for functions charged and allocated to IAWC.
5. Reviewed the relevant portions of the IAWC's testimony, exhibits and supporting documentation from Docket 09-0319 specific to the Lab and water testing.
6. Identified services and evidence of controls over affiliate costs.
7. Determined whether reports and documentation included in the testimony provide reasonable support for the costs charged to IAWC for Lab services.
8. Evaluated the functions performed by the AWWSC Lab for outsourcing research.
9. Reviewed data responses to identify metrics, deliverables, and service parameters relative to the services or sub-services provided by the Lab.
10. Requested and reviewed data on testing volume and level of services provided to AWK regulated utilities and unregulated entities to obtain estimates of the volume and level of services used by IAWC.
11. Researched industry standards and benchmarks for level of services and cost.
12. Contacted potential competitive service providers to obtain pricing for specific groups of sub-services.
13. Obtained other estimates for the cost of the various groups of sub-services from industry associations, aggregated industry data, salary studies, competitive research from other states or industries, and other sources.
14. Compared the competitive cost of services to the AWWSC costs.

15. Developed conclusions regarding the reasonableness of prices and value of the services provided by AWWSC, given the competitive pricing and all externalities and unique factors.
16. Prepared a task report.

C. RESULTS

1. **The Lab, as one of the fourteen certified laboratories in the country performs nearly 10 percent of its water quality tests for commercial third-party clients and AWK non-regulated affiliates in the commercial competitive marketplace.**⁷

• AWK Operating Companies tests:	69,027 ⁸
• Commercial third-party tests:	6,100 ⁹
• AWK non-regulated affiliates tests:	159 ¹⁰
• Total tests performed in CY2010:	75,286

2. **The Lab uses a price sheet for charging water quality test services to commercial third-party and AWK non-regulated affiliates.**¹¹

- In Docket 09-0319 IAWC supplemented AWWSC's Cost Study with the Belleville Lab Cost Study which reviewed the per test costs of testing performed by the Lab. The study compared the fully allocated test costs to per test prices from independent labs for over 55,000 water quality tests.¹²
- IAWC's cost study showed that prices of individual tests are available through non-affiliated vendors and some are lower than the Lab.
- The Lab uses a testing services price sheet for non-affiliated and non-regulated clients.¹³

3. **In 2010, the Lab received less revenue from commercial customers than it should have based upon its commercial testing prices representing an additional IAWC credit of \$15,672.**

- The total 2010 revenue that the Lab received from tests performed for clients other than AWK regulated utilities was \$403,995.¹⁴
- **Exhibit XVII-2** shows that testing performed at the Lab's commercial prices should have obtained \$581,190.¹⁵ This represents a revenue difference of \$177,195.

⁷ DR 1 Direct Testimony of J. Young in Docket 09-0319

⁸ DR 161

⁹ DR 194

¹⁰ DR 194

¹¹ DR 159 Attachment 1 and 197 Attachment 1

¹² DR 1, Direct Testimony of E. Grubb in Docket 09-0319, Exhibit 5.00 pages 8 -12.

¹³ IS 73

¹⁴ DR 391

Exhibit XVII-2
2010 Lab Tests Performed for Commercial Customers at Unit Prices

Commercial Customers				
Commercial Tests	Description	Samples	Unit Price	Total Price
1623	LT2 (Cryptosporidium)	168		
180.1R2.0	Turbidity	124		
200.7R4.4	ICP (Metals)	61		
200.8R5.4	ICPMS (Metals), Pb/Cu	149		
200.8R5.4HG	Mercury	5		
245.2	Mercury	17		
300.0R2.1	Anion (NO3- Nitrate)	69		
300.0R2.1A	Anion (Fluoride)	54		
300.1R1.0	DBP Minerals (Chlorite, Bromide)	147		
314.0R1.0	Perchlorate	2		
335.4R1.0	Cyanide	21		
350.1R2.0MOD	Ammonia	5		
502.2R2.1	THM (Trihalomethanes)	204		
504.1R1.1	EDB	39		
505R2.1	PCB	1,221		
515.3R1.0	Herbicide	210		
521R1.0	521 UCMR	96		
524.2R4.1	VOC (Volatiles)	53		
525.2R2.0	525 (Semivolatiles)	299		
525.2R2.0SIM	525 (Semivolatiles)	224		
527R1.0	527 UCMR	89		
529R1.0	529 UCMR	87		
531.1R3.1	Carbamates	508		
535R1.1	535 UCMR	59		
547	Glyphosate	478		
548.1R1.0	Endothall	173		
549.2R1.0	Diquat	171		
SM2120B	Color	5		
SM2320B	Alkalinity	171		
SM2330B	Calcium Carbonate Saturation	5		
SM2510B	Conductivity	5		
SM2540C	TDS Total Dissolved Solids	6		
SM2540E	TVS Total Volatile Solids	10		
SM4500-H+B	pH	5		
SM5310C	TOC Total Organic Carbon	230		
SM5910B	UV (SUVA)	37		
SM6040DMOD	T & O (Taste and Odor)	1		
SM6251BMOD-19th	HAA (Haloacetic Acids)	779		
SM7500RnB	Radon	4		
Total per the Lab price sheet		5,991		\$581,190

- During 2010, using AWWSC's charge allocation rate, this difference would represent an additional \$15,672 credit against lab charges to IAWC.
4. In 2010, the Lab charged IAWC \$193,455 more than it should have, based upon the prices charged to commercial third-party and AWK non-regulated affiliates.¹⁶
- The 2010 table that correlates the Lab tests performed for IAWC with the price charged for each test to commercial third-party and non-regulated AWK affiliates is shown in **Exhibit XVII-3**.
 - The total cost that IAWC should have been charged was \$249,779.

¹⁵ DR 392 Attachment 1

¹⁶ DR 161, 197 and 328